

METER, FIGURE, NOISE
NFONT-B

- 1.0 GENERAL. This procurement requires a portable, solid-state, ruggedized noise figure meter capable of making noise figure/sensitivity measurements on microwave receiving systems with a frequency range from 5 MHz to 40 GHz.
- 2.0 CLASSIFICATION. The equipment shall meet the requirements of MIL-T-28800, Type III, Class 5, Style E, Color R for Navy shipboard, submarine, and shore applications with the following modifications and exceptions:
- a. The nonoperating temperature requirement is limited to the range of -40°C to +70°C.
 - b. The relative humidity requirement is limited to 95% noncondensating.
 - c. The operating and nonoperating altitude requirements are not invoked.
- 3.0 OPERATIONAL REQUIREMENTS. The equipment shall be capable of measuring and directly indicating noise figure in dB within the specifications and accuracies contained herein.
- 3.1 Measurement Frequency Range. At least 5 MHz to 40 GHz.
- 3.2 Measurement Range. The noise figure measurement range shall be at least 2 to 30 dB.
- 3.2.1 Resolution. The resolution of the noise figure indication shall be at least 0.1 dB.
- 3.3 Noise Source The noise source must have the capabilities of providing at least 5 dB and/or 15 dB excess noise ratios within ± 1.0 dB over the entire frequency range.
- 3.4 Accuracy. The overall accuracy of the noise figure indication, including meter, noise source, and any attenuators required, shall be within ± 2.0 dB when compared with a comparable Y-factor measurement.
- 3.5 IF Input. The input shall be linear, nonsaturating band-limited noise with the following minimum characteristics:
- 3.5.1 Frequency. At least 10 to 200 MHz.

3.5.2 Sensitivity. At least -65 dBm.

3.5.3 AGC Range. At least 40 dB.

3.6 Plotter Outputs. The equipment shall provide an output capable of driving the Y channel of a standard X-Y analog plotter to produce a plot of noise figure across the frequency range under test when the X channel is driven by a ramp proportional to frequency.

4.0 GENERAL REQUIREMENTS.

4.1 Dimensions. The total volume of the unit shall not exceed 24,600 cubic cm (1,500 cubic in).

4.2 Weight. The overall weight of the unit (including noise source/accessories) shall not exceed 18 kg (40 pounds).

4.3 Power. 115/230 Vac $\pm 10\%$, 50/60 or 400 Hz, 150 VA maximum.